taken from the caves with block and tackle. It had to be first lifted from ledge to ledge and then taken out. It is not thought best to make the opening larger as it might interfere with the freezing. A photograph of the inside is not easily taken, and there are none in Flagstaff, though it would be possible to take one by flashlight. A photograph of the outside would convey no idea whatever as it is merely a pile of rocks, and was found by accident.

OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, the monthly report of meteorological conditions at Honolulu is now made partly in accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

Meteorological Observations at Honolulu, February, 1901.

The station is at 21° 18′ N., 157° 50′ W.

Hawaiian standard time is 10h 30m slow of Greenwich time. Honolulu local mean time is 10h 31m slow of Greenwich.

Pressure is corrected for temperature and reduced to sea level, and the gravity correction, −0.06, has been applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force, or amounts of cloudiness, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours is measured at 9 a. m. local, or 7.31 p. m., Greenwich time, on the respective dates.

The rain gage, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 43 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level.	Temperature.		During twenty-four hours preceding 1 p. m., Greenwich time, or 2.29 a. m., Honolulu time.									Sea-level pressures.		Total rainfall at 9 a. m., local time.
				Temperature.		Means.		Wind.		Average cloudiness.					
		Dry bulb.	Wet bulb.	Maximum.	Minimum.	Dew-point.	Relative humidity.	Prevailing direction.	Force.				Maximum.	Minimum.	
	*	†	†			‡	‡		§						
1	29.90	65	57	75	61	50.7	77	w-ne.	1-3	8-0			29.93	29.85	0.03
2	29.90	59	57	73	61	54.3	64	n-sw.	1-0	0			29.93	29.83	0.00
3	29.86	68	64	77	57	60.5	78	s-ne.	1	1-10			29.94	29.84	0.00
4	29.66	70	64	76	67	60.7	71	nne.	2-4	10			29.89	29.60	0.32
5	29.53	70	67.5	75	65	62.3	70	se-e	5	10-8			29.67	29.52	0.09
6	29.51	69	67	76	68	66.7	84	ss -s.	5-4	10			29.59	29.48	0.53
7	29.58	68	66.7	75	66	67.3	85	ssw-sw.	6-4	9-10			29.57	29.48	1.01
8	29.61	67	65.7	75	66	66.3	89	sw-n.	3-1	10-3			29.68	29.56	1.00
9	29.66	72	64	72	65	65.7	92	sw-w.	2-0	10-7			29.71	29.63	0.30
10	29.62	69	67 5	77	70	62.3	69	sw.	4-2	2-7			29.72	29.62	0.27
11	29.66	71	69.7	77	65	68.3	88	sw-w.	3	10-7			29.69	29.60	0.73
12	29.74	72	68.5	77	69	67.7	85	sw.	3	5-10			29.73	29.68	0.06
13	29.72	71	69.7	73	70	68.3	89	w.	0-1	10			29.82	29.72	2.87
14	29.83	61	58.5	72	68	65.7	92	w-n.	1	10			29.85	29.70	0.54
15	29.93	65	59	73	60	58.3	80	sw-ne.	1	5-1			29.96	29 81	0.05
16	30.08	67	58	74	60	55.3	62	nne.	1-4	4			30.05	29.94	0.04
17	30.09	65	58.5	73	65	57.7	68	ne.	3	6			30.11	30.02	0.02
18	29.98	56	54	72	64	53.5	60	nne.	4-5	1 0			30.11	30.02	0.00
19	29.89	58	57.3	74	55	55.3	73	sw.	0-1	1-5			30.04	29.89	0.00
20	29.80	63	61	77	57	60.3	81	w.	3	4			29.92	29.80	0.00
21	29.81	62	58	77	58	62.3	77	wnw.	4	4			29.86	29.75	0.05
22	29.91	56	54	73	59	54.7	70	nw.	3-1	4-1			29.95	29.80	0 00
23	29.85	68	62.5	73	54	53.5	67	n-s.	1-0	2			29.96	29.84	0.04
24	30.03	56	54.5	75	64	58.7	71	wsw.	2-0	8-0			30.04	29.86	0.01
25	30.03	58	57	75	55	56.0	72	sw-n.	1-0	1-3			30.09	30.00	0.00
26	29.94	64	62.7	76	56	60.3	70	se-sw.	1-0	1-3			30.04	29.93	0.00
27	29.93	64	62.7	78	63	65.0	81	sw.	2-0	1-6			29.99	29.89	0.00
28	30.04	67	64	78	64	63.3	76	sw-ne.	1-3	1-8			30.08	29.91	0.00
Sums.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.96
Means.	29.822	65.0	61.8	75.0	62.7	61.6	76.5	.....	2.2	5.3			29.890	29.792	.....
Departure.	−.109	.....	.....	.....	.....	−1.0	+1.6	.....	.....	.....	.....	.....	.....	.....	+2.00

Mean temperature for February, 1901 (6+2+9) ÷ 3 = 68.7; normal is 70.4. Mean pressure for February, 1901 (9+3) ÷ 3 = 29.838; normal is 29.947.

*This pressure is as recorded at 1 p. m., Greenwich time. †These temperatures are observed at 6 a. m., local, or 4.31 p. m., Greenwich time. ‡These values are the means of (6+9+2+9) ÷ 4. §Beaufort scale.

Mean pressure lowest in twenty years. Mean temperature lowest for February with one exception. General electric storms throughout the group from the 4th to 15th probably came from the south-southwest, during which time the barometer fell to the lowest point reached in twenty years. Very heavy rains and snow fell on the mountains.

MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of Señor Manuel E. Pastrana, Director of the Central Meteorologic-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in advance of their publication in the Boletin Mensual. An abstract, translated into English measures, is here given, in continuation of the similar tables published in the MONTHLY WEATHER REVIEW since 1896. The barometric means have not been reduced to standard gravity, but this correction will be given at some future date when the pressures are published on our Chart IV.

Mexican data for February, 1901.

Stations.	Altitude.	Mean barometer.	Temperature.			Relative humidity.	Precipitation.	Prevailing direction.	
			Max.	Min.	Mean.			Wind.	Cloud.
	Feet.	*Inch.*	°*F.*	°*F.*	°*F.*	%	*Inch.*		
Chihuahua	4,669	25.30	69.3	33.4	51.4	59	0.16	sw.	w.
Durango (Seminario).	6,243	24.02	84.4	29.3	54.9	44	0.24	sw.	w.
Leon (Guanajuato)...	5,934	24.31	78.8	37.6	58 5	52	0.63	nw.	sw.
Linares (Nuevo Leon).	1,188	28.75	87.8	35.6	61.5	66	0.24	n.	s.
Mazatlan	25	29.98	79.0	60.3	70.3	77	0.88	nw.	w.
Mexico (Obs. Cent.)...	7,472	23.06	72.7	34 2	57.2	48	0.99	n.	.....
Morelia (Seminario)..	6,401	23.98	74.7	33 8	55.6	58	1.50	s.	w.
Puebla (Col. Cat.)...	7,112	23.39	73.8	41.9	58.8	54	0.87	e.	sw.
Saltillo (Col. S. Juan).	5,399	24 79	75.2	33 8	55.9	66	0.47	s.	s.
San Luis Potosi.....	6,202	24.11	75.6	41.0	58.6	61	1.09	sw.	w.
Tampico.....	38	.....	.....	.....	.....	.....	.....	.....	.....
Zapotlan (Seminario)	5,078	25.11	81.0	38.5	61.0	53	1.50	sse.	w.

RELATIVE LENGTH OF WARM AND COLD SEASONS.

By HENRY PENNYWITT, dated February 20, 1901.

Charts XI, XII, and XIII have been prepared with the view of determining approximately the length of the warm and cold seasons in various locations, by comparing the daily normal temperatures in spring and autumn with the annual means as computed from records for twenty-five years or less of 135 Weather Bureau stations between 1872 and 1898.

The dates on which the daily normal temperatures in spring equal the annual mean vary according to locality. In the upward progress the daily normals first overtake the annual in the Northwest, in the region including the greater portion of Texas and portions of Arkansas, Oklahoma, and Kansas, where the dates range from about the 5th to the 10th of April; in the Mississippi Valley the dates range from the 10th to the 15th of April; in the region extending from the east Gulf States northward to the Ohio Valley, including the eastern portions of Wisconsin and Illinois, all of Indiana, the most of Ohio, and portions of Pennsylvania and New York, the dates fall between the 15th and 20th of April; in the greater portion of the upper Lake region and in a strip near the Atlantic coast between the 20th and 25th of April; along the middle Atlantic coast and in the lower Lake region after the 25th of April; in the region including western Colorado, Utah, portions of Nevada, New Mexico and Arizona, and in southern California, they occur much later, as late as the 1st to 10th of May in the region last named.

In the autumn, when the temperatures are declining, the daily normals first coincide with the annual mean in the Ohio Valley and Gulf States and in the southern slope of the Rocky Mountain region, where this occurs before the 20th of October; along the Atlantic coast about the 25th of October; along the Pacific coast it occurs after the 1st of November, the latest date being in the vicinity of San Francisco, Cal., or about the 20th of November.

If the year be divided into two seasons, the warm and the cold season (the warm season including the time when the daily normals are above the annual mean and the cold season when they are below), it is found that in the greater portion of the United States the warm season is longer than the cold, the exceptions being in the southern slope of the Rocky Mountain region and in small areas in the lower Lake region and Middle Atlantic States. The longest warm season is in